CLAIMS

What is claimed is:

1. A helmet for cushioning a head during a sudden impact, comprising:

a helmet shell; and

an energy absorbing protective liner fitted to an interior surface of the helmet shell, wherein the energy absorbing protective liner comprises a slow recovery viscoelastic material with a surface impregnation of a waterproofing material and wherein a surface of the energy absorbing protective liner facing the interior surface of the helmet shell lacks the waterproofing material.

2. The helmet according to claim 1, wherein the slow recovery viscoelastic material is slow recovery viscoelastic polyurethane foam.

3. The helmet according to claim 1, wherein the waterproofing material is silicone.

4. A helmet for cushioning a head during a sudden impact, comprising:

a helmet shell; and

a plurality of energy absorbing protective pads arranged on an interior surface of the helmet shell, wherein each of the energy absorbing protective pads comprises a slow recovery viscoelastic material with a surface impregnation of a waterproofing material and wherein a surface of each of the energy absorbing protective pads facing the interior surface of the helmet shell lacks the waterproofing material.

5. The helmet according to claim 4, wherein the slow recovery viscoelastic material is slow recovery viscoelastic polyurethane foam.

6. The helmet according to claim 4, wherein the waterproofing material is silicone.

7. The helmet according to claim 4, wherein the plurality of energy absorbing protective pads are shaped into pads of variable thickness and size.

8. A helmet for cushioning a head during a sudden impact, comprising:

a helmet shell comprising a thermoplastic shell having a humanoid head shape, and lateral members at least partially disposed around a circumference of a central portion of the thermoplastic shell; and

an energy absorbing protective liner fitted to an interior surface of the helmet shell, wherein the energy absorbing protective liner comprises a slow recovery viscoelastic material with a surface impregnation of a waterproofing material and wherein a surface of the energy absorbing protective liner facing the interior surface of the helmet shell lacks the waterproofing material.

9. The helmet according to claim 8, wherein the helmet shell has a thickness of at least 2 millimeters.

10. The helmet according to claim 8, wherein the thermoplastic shell is an injection molded plastic shell.

11. The helmet according to claim 8, wherein the thermoplastic shell is a pressure molded thermoset resin reinforced with at least one of a glass fiber, KEVLAR fiber or carbon fiber.

12. The helmet according to claim 8, wherein the lateral members are thicker than other portions of the helmet shell.

13. The helmet according to claim 8, wherein the lateral members disperse an impact force from a point of contact to other portions of the helmet shell.

14. The helmet according to claim 8, wherein the helmet shell disperses at least thirty percent of an impact force applied to the helmet shell.

15. The helmet according to claim 8, wherein the slow recovery viscoelastic material is slow recovery viscoelastic polyurethane foam.

16. The helmet according to claim 8, wherein the waterproofing material is silicone.

17. The helmet according to claim 8, wherein each of the lateral members disposed around a circumference of the helmet shell is comprised of an upper lateral member and a lower lateral member, and the upper lateral member and the lower lateral member are separated by a lateral channel.

18. The helmet according to claim 17, wherein the helmet shell further comprises a strap attachment member, and the lower lateral member is angled towards the location where the strap attachment member is disposed on the helmet shell.

19. A helmet for cushioning a head during a sudden impact, comprising:

a helmet shell comprising a thermoplastic shell having a humanoid head shape, and lateral members disposed around a circumference of a central portion of the thermoplastic shell; and

a plurality of energy absorbing protective pads arranged on an interior surface of the helmet shell, wherein each of the energy absorbing protective pads comprises a slow recovery viscoelastic material with a surface impregnation of a waterproofing material and wherein a surface of each of the energy absorbing protective pads facing the interior surface of the helmet shell lacks the waterproofing material.

20. The helmet according to claim 19, wherein the slow recovery viscoelastic material is slow recovery viscoelastic polyurethane foam.